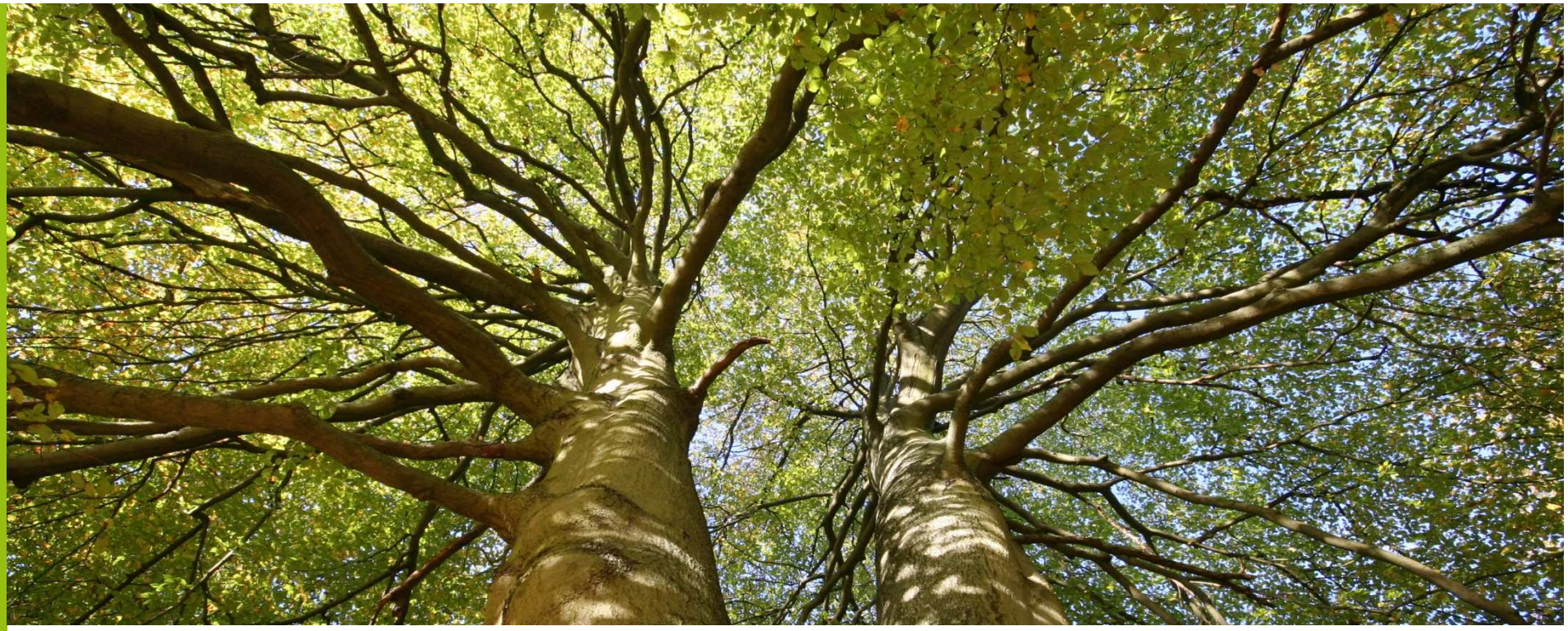


SmartSenior –
Intelligent services for senior citizens.

The Project.

SmartSenior

Agenda.

- Motivation
- Mission
- Consortium
- Timetable
- Project structure
- Architecture

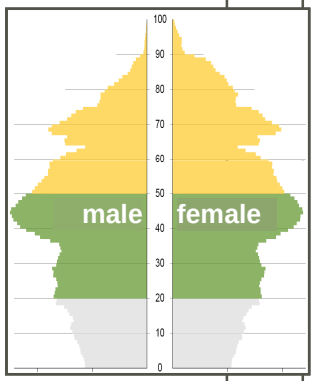
SmartSenior

Motivation.

The market for services that enable an independent and self-determined lifestyle is growing at a rapid pace.

Growing target group 50+.

- In 2008, **32.2 million people** (39% of the German population) were aged 50 or above.* During the course of demographic change, the number of 50+ households will grow **by 50%** over the next ten years.



- The 50+ generation is financially well-off (net income approx. **740 billion €** in 2008**) and willing to spend on areas of life that are important to them.

Needs not met.

- The products and services currently available for the “silver generation” are still characterized by **limited availability, poor integration** and **high costs**.
- There is no integrative solution available on the market which accommodates the **different individual needs** of the target group.
- **User interfaces** lack **consistency and intuitiveness**; this represents a major hurdle for wide-ranging user acceptance.

Sources: *) Federal Statistical Office, 2006 (http://www.destatis.de),
**) GFK, 2008 (http://www.gfk.com/imperia/md/content/presse/pd_kaufkraft_i-2008_dfin.pdf).

SmartSenior

Agenda.

- Motivation
- Mission
- Consortium
- Timetable
- Project structure
- Architecture

SmartSenior

Mission.

The various scenarios in SmartSenior are derived from known basic needs.

Be safe on the go.

Get well and stay healthy.

Live independently at home for longer.

SmartSenior

Mission.
Scenarios.

A

Be safe on the go.

Be safe on the go.

- Increased objective and subjective safety.
- Extended tracking systems.
- Extended emergency assistance with vital data transmission.
- Safe emergency stop function in the car.

SmartSenior

Mission.
Scenarios.

Applications:

- Preventing falls
- Stroke rehabilitation
- Pain management
- Peritoneal dialysis

Get well and stay healthy.

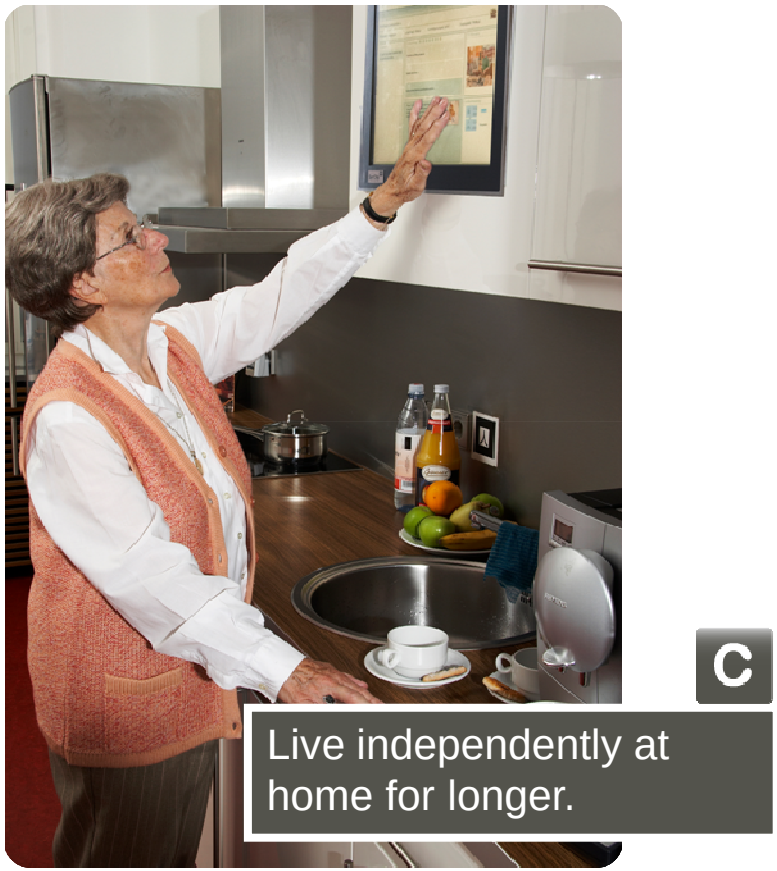
- Telemedical aftercare and support in the home.
- Standardized transmission of vital parameters and detection of anomalies.
- Integration of care and support services.

SmartSenior

Mission.
Scenarios.

Live independently at home for longer.

- Assistance with everyday domestic life, integration of social and other services in the neighborhood.
- Safety in the home, prevention and identification of emergency situations.
- Integrated, easy-to-use communication facilities with social network and service providers.



SmartSenior

Mission.

Scenarios and main objectives.

A

Be safe on the go.

Maintaining older people's standard of living from an economic, health and social perspective.

B

Get well and stay healthy.

C

Live independently at home for longer.

SmartSenior

Mission.

SmartSenior addresses the full range of needs of older people.

- Mobility
- Finding things / places
- Feeling safe
- Building automation
- Staying in touch
- Infotainment

A C

- Getting dressed
- Eating, cooking, drinking
- Taking medicine
- Shopping
- Cleaning
- Fitness / training

C

- Assistance
- Identification
- Prediction
- Prevention

A B C

- Prevention
- Treatment
- Rehabilitation
- After-care
- Care

B C

A Be safe on the go.

C Live independently at home for longer.

B Get well and stay healthy.

Based on: Eyman et al.: The Cloud of Care: Ein Bezugsrahmen für die Integration von Technologie und Dienstleistung im Ambient Assisted Living

SmartSenior

Mission.
Priority areas.

- Development of **emergency identification and assistance systems** for safe mobility.
- Integration of existing and new **services** in the areas of prevention, treatment and rehabilitation.
- Creating of **solutions for increased safety** in the home and on the move.
- Development of an age-appropriate **communications infrastructure** with simple, intuitive user interfaces.
- Conducting **field studies** on acceptance, benefits, costs and sustainability with service providers in **model apartments and Living Labs**.





SmartSenior

Agenda.

- Motivation
- Mission
- Consortium
- Timetable
- Project structure
- Architecture

SmartSenior

Consortium.
Partners.

Research

Max-Planck-Institut für Bildungsforschung
Max Planck Institute for Human Development
TU berlin
Fraunhofer
DFKI Deutsches Forschungszentrum für Künstliche Intelligenz GmbH
Deutsche Stiftung für chronisch Kranke

Health service providers

Schmerz Zentrum Berlin
Vivantes
CHARITÉ Universitätsmedizin Berlin
SMH 19221 Schnelle Medizinische Hilfe

Manufacturers of sensor systems and medical equipment*

SIEMENS
Otto Bock QUALITY FOR LIFE
getemed
humotion PRECISION TIMES SUCCESS
Fresenius Medical Care **

Information technology

jambit WHERE INNOVATION WORKS
Tembit
ais AIS Automations- und
GLOBAL HEALTH CARE
argos
ClinPath
NUROMEDIA
prisma IT comes first.

Infrastructure and network providers

Telekom Innovation Laboratories
T
Alcatel·Lucent

Mobility service providers

Qiro Schon unterwegs!
BMW Group Research and Technology

Health and care insurance companies**

SBK **
BARMER GEK die gesund experten **
In negotiations with others.

Care and support providers

DIE JOHANNITER

Housing industry

ProPotsdam GEWOBA

* Supported by: thermokon Sensortechnik GmbH
** As associated partners, commitments with SBK under negotiation.

SmartSenior

Consortium.
Funding.

- **Funding** within the framework of the High-Tech Strategy for Germany, call for tenders for “Altersgerechte Assistenzsysteme für ein gesundes und unabhängiges Leben” (Age-appropriate assistance systems for healthy, independent living) by the Federal Ministry of Education and Research (BMBF) - 18 projects.

- **Coordinator:** Deutsche Telekom Innovation Laboratories

- **Project term:** 2009 – 2012, kick-off July 2009

- **BMBF:** Dept. 524 Demographic Change; Human-Machine Co-operation

- **Project initiator:** VDI/VDE-IT (Innovation & Technology)

- **Project volume:** approx. € 41 million (approx. 59% funded by the BMBF)

SPONSORED BY THE
Federal Ministry of Education and Research

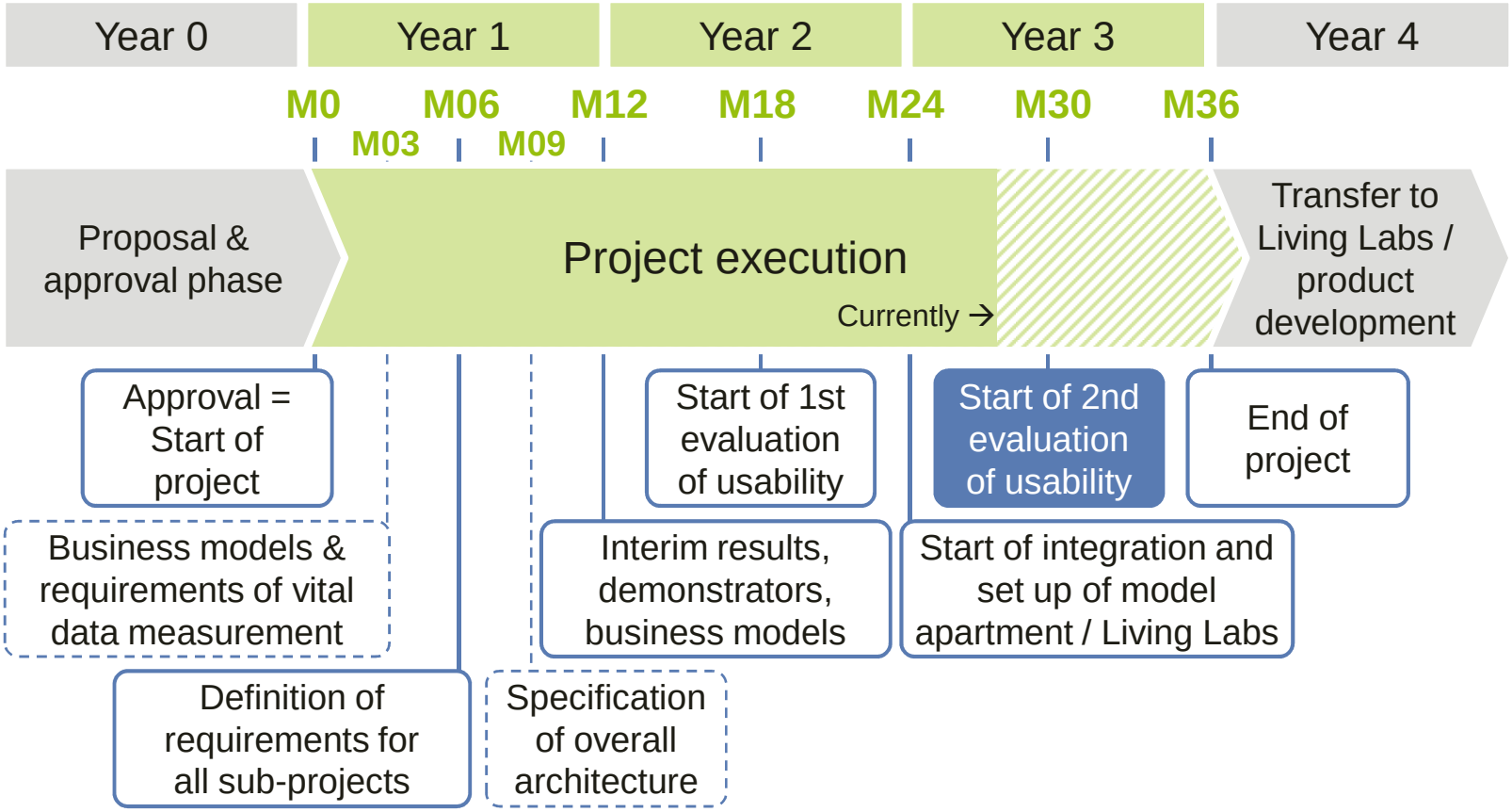
SmartSenior

Agenda.

- Motivation
- Mission
- Consortium
- Timetable
- Project structure
- Architecture

SmartSenior

Timetable.



SmartSenior

Agenda.

- Motivation
- Mission
- Consortium
- Timetable
- Project structure
- Architecture

SmartSenior

Project structure.

TP1 Program management

TP2 Emergency assistance

TP3 Integrated healthcare services for mobility and quality of life

TP4 Security solutions for households & service portal for convenient living

TP5 Communications solutions for social networking

TP6 Measurement and management of vital data

TP7 Telemedical service center

TP8 Targeted network and services infrastructure

TP9 User-friendly design and evaluation

SmartSenior

TP1: Program management.

Objectives and content.

- **Planning** of technical content, resources and scheduling, and periodic adjustment.
- **Evaluation** of deviations from the plan and formulation of **corrective action**.
- Communication and coordination with the **funding provider** and **agreement** of amendments and corrective action.
- Regular communication on superordinate **project goals** and project results.
- Selection, provision and administration of a **joint work platform** for distributed working, **meeting support**.
- Comprehensive communications strategy encompassing the entire project and processing of the main **project results**.

Telekom Innovation Laboratories

eict

Alcatel·Lucent

SmartSenior

TP2: Emergency assistance.

Objectives and content.

Preserving individual mobility and self-determination

- Ubiquitous, permanent identification of medical emergencies.
- Fast, selective, tailor-made emergency **medical assistance**.
- Severing the link between individual **mobility** and the risk of accidents in old age.

Principal content

- Implementation of a system for the **monitoring** and **management of vital parameters** covering all spheres of life in order to **identify emergency situations**.
- Development of an intelligent **emergency management system** covering all spheres of life with high-precision localization options.
- Development of an **emergency stop assistant** for cars.
- Provision of a modular range of services.

BMW Group Research and Technology

Telekom Innovation Laboratories

argos

CHARITÉ

jambit

getemed

Qiro

Deutsches Forschungszentrum für Künstliche Intelligenz GmbH

SmartSenior

TP3: Telemedical healthcare services.

Objectives and content.

- Linking **medical care** between the various players in the healthcare network.
- **Enhancing the quality of life** of pain patients via monitoring by specialist doctors at any time, and from any location.
- Encouraging mobility through **motivating exercises**.
- Carrying out rehabilitation measures in the **patient's own home**.

Applications:

1. Preventing falls
2. Stroke rehabilitation
3. Pain management

SmartSenior

TP4: Security and service portal for convenient living.

Objectives and content.

Development of an integrated service landscape
enabling people to live independently for longer in their own homes with the following characteristics/components:

- Avoidance and identification of **emergency situations** in the home environment.
- **Equipment monitoring** and remote control.
- A joint **portal for all** residential and neighborhood-related **needs**.

Joint development of innovative, cooperative business and financing models:

- Development of **financially viable concepts** in order to integrate service solutions into the existing housing stock.
- Evaluation of **business scenarios** with innovative cost- and revenue-sharing models.

Telekom Innovation Laboratories
Alcatel·Lucent
prisma IT comes first.
Deutsches Forschungszentrum für Künstliche Intelligenz GmbH
DIE JOHANNITER
PROPOTSDAM GEWOBA
CHARITÉ
SIEMENS

Supported by:
thermokon

SmartSenior

TP5: Communication solutions for social networking.

Objectives and content.

- Live independently for longer in a **familiar environment**.
- Maintain existing and create new **family and social networks**.
- Identification of **user behavior and user acceptance** for new types of services with innovative operating concepts for:
  - Telepresence - See and talk to one another as if you were in the same room: Simple **communications options** via audio and video integrated into the TV.
  - Ambience sharing: Supporting users in their home environment, even **across large distances**, to make and maintain contact with other people on the basis of shared interests and to bring them together in **social networks**.

Telekom Innovation Laboratories

Alcatel·Lucent

SmartSenior

TP6: Modular measurement & management of vital data.

Objectives and content.

- **Development of microsystems** for logging health data in a modular fashion (e.g. pulse, body temperature, O2 saturation, heart rate, respiratory rate, perspiration measurement, and optionally ECG, blood pressure and blood sugar).
- The sensor device to be developed should also display the following **features**:
  - Tracking module (e.g. GSM/GPS), an interoperable display, memory module, tactile function (vibration) as well as acceleration, temperature and pressure sensors.
  - **External sensors**, e.g. blood pressure, blood sugar, ECG, may be connected.
  - **Automatic data communication** / synchronization to a base station is achieved via existing infrastructures (WLAN etc.).

SIEMENS

Fraunhofer

CHARITÉ

ClinPath Clinical Pathways

Vivantes

Deutsche Stiftung für chronisch Kranke

SmartSenior

TP7: Telemedical service center.

Objectives and content.

Integration of currently proprietary **telematic services** for support at home and on the go based on a **cross-sectoral approach**:

- Drafting of a White Paper on telemedical business models.
- Development of the DIN/ETSI Standard TM7 "Telemedical services“.
- Development of a treatment service center for the supply of complex services.

SmartSenior

TP8: Targeted network and service infrastructure.

Objectives and content.

Combining all project activities relating to the required network and services infrastructure:

- Targeted, future-safe infrastructure solutions (**middleware**) to implement the applications, particularly from TP2, TP4, TP5 and TP7.
- Wide-ranging compatibility of user interfaces and data structures - **Integrated services**.
- New network functions to **aid mobility**.
- Cross-lingual dialog patterns and gestures to **overcome language barriers** – for use e.g. in an emergency.
- Models for the self-monitoring and self-repair of the platform and infrastructure for **improved availability**.
- Technology roadmaps and basic research on **simplifying the use of services** e. g. intelligent sensor networks, semantic searches, machine-assisted dialogs.

Telekom Innovation Laboratories

Alcatel·Lucent

Fraunhofer

SIEMENS

Deutsches Forschungszentrum für Künstliche Intelligenz GmbH

SmartSenior

TP9: User-friendly design and evaluation.

Objectives and content.

- Designing the **human/machine interfaces** with a view to older users and improving the usability engineering.
- Estimating the **environmental impacts and costs** of AAL services and evaluating the social aspects.
- Definition of cross-sub-project **interaction strategies and user interfaces**.
- Development of (semi-)automatic techniques for determining the **quality and usability** of interactive AAL systems.
- Two **evaluations** of the human/machine interfaces:
  - Prototype-based evaluation among developers.
  - Evaluation in cross-sub-project scenarios with end users.
- Evaluation of environmental pros and cons associated with system use and socio-economic analyses of the services.

Deutsches Forschungszentrum für Künstliche Intelligenz GmbH

BMW Group Research and Technology

DIE JOHANNITER

Telekom Innovation Laboratories

SIEMENS

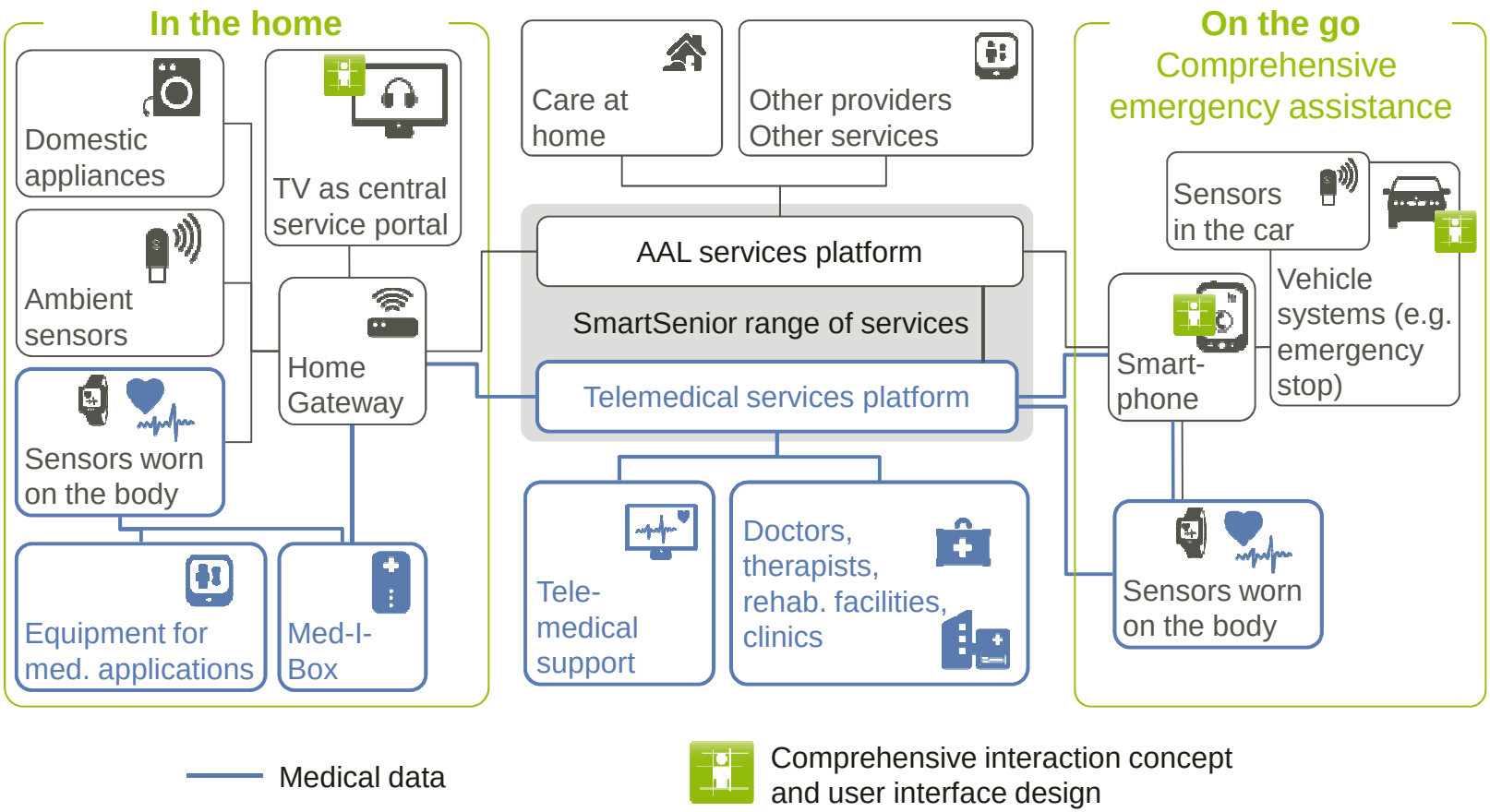
SmartSenior

Agenda.

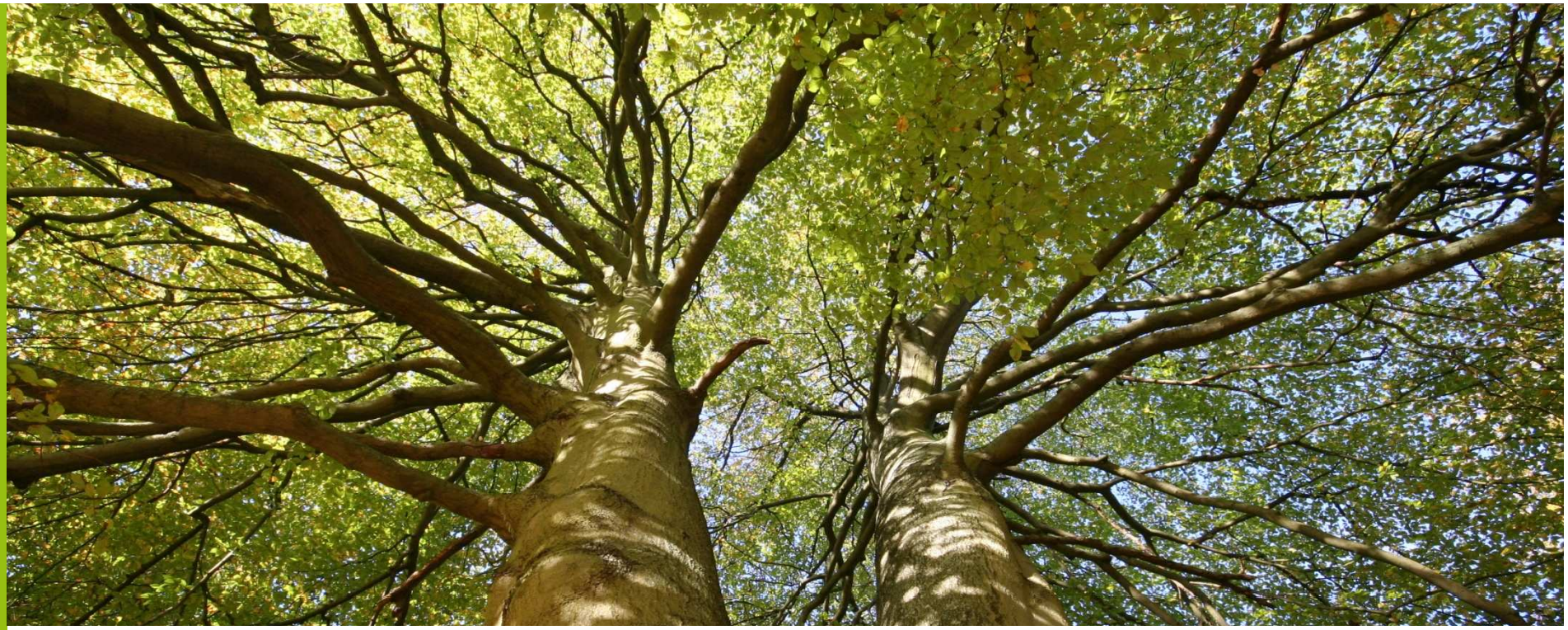
- Motivation
- Mission
- Consortium
- Timetable
- Project structure
- Architecture

SmartSenior

SmartSenior architecture.



SmartSenior



www.smart-senior.de

Coordinator:
Michael C. Balasch
Deutsche Telekom Innovation Laboratories
Research & Innovation, Director Health
Ernst-Reuter-Platz 7, 10587 Berlin
e-mail: michael.balasch@telekom.de

Media Contact
Hans-Martin Lichtenthäler
Deutsche Telekom
Friedrich-Ebert-Allee 140, 53105 Bonn
e-mail: hans-martin.lichtenthaeler@telekom.de

SmartSenior